



Meet higher power quality, efficiency, safety, and reliability demand with metal-enclosed, pad mounted capacitor banks

Reduce losses and CO₂ emissions, improve power quality, safety, and reliability in your underground distribution system. Eaton— with 70 years of capacitor development experience — introduces metal-enclosed, pad-mounted capacitor banks that are smaller, easy-to-install and maintain, and non-intrusive.

Improving power factor in the distribution system can save a medium utility up to 2,570,000 kWh annually*. Pad-mounted capacitors improve efficiency in the power system by reducing losses from point of application to the generator, saving money and decreasing CO₂ emissions. Capacitors also improve power quality by supporting voltage.

Underground cable does have capacitance, but on heavilyloaded lines, especially in areas with growing inductive loads such as high air-conditioning demand for example, the cable capacitance is not sufficient. As an increasing number of distribution feeders go underground there is a corresponding increase in the need for pad-mounted capacitor bank installations. Utility applications include placement in the substation and out on the feeder.

Utilities can also benefit from pad-mounted capacitor banks applied in drops from overhead feeders when poles are too congested for pole-mounted banks. Commercial and industrial applications include industrial parks, industrial substations, universities, mines, and shopping malls.

Eaton pad-mounted capacitor banks are designed to IEEE, CSA, and IEC standards for worldwide utility and industrial applications with standard ratings up to 25 kV, 3.6 Mvar, and 150 kV-BIL.



EATON

Powering Business Worldwide

Power quality and efficiency improvement

Underground distribution systems with metal-enclosed, pad-mounted capacitor banks will see increased power quality through:

- Reduced losses, leading to higher efficiency throughout the system
- Power factor improvement
- Voltage improvement
- System capacity release
- Zero Voltage Closing (ZVC) capable

Increased safety

Because pad-mounted capacitor banks are typically installed in areas accessible to the public, safety is critical. We meet or exceed all safety requirements including:

- Public and personnel protection
 - Tamperproof per ANSI/IEEE Std. C57.12.28™ -2005 standard
 - Deadfront construction for protection from energized parts
- Most reliable capacitors in the industry:
 - Highest safety margin to discharge inception voltage (DIV) in the industry
 - Highest i^2t withstand in the industry
 - All fusing is current-limiting to provide maximum safety in the event of a component failure

Improved reliability

The capacitor enclosure leads to less downtime:

- Less susceptible to animal and pollution related outages
- Faster and easier maintenance — no bucket truck needed
- Less maintenance needed as the equipment is protected by the enclosure
- Lower system integration risk since Eaton provides the capacitors, fuses, and enclosure
- Can be installed in harsh environments as the enclosure protects the electrical equipment inside

Smaller, non-intrusive design

- No fence needed around capacitor bank
- Vertical and horizontal clearance requirements eliminated
- More compact, pleasing to the eye design
- Can be painted to blend into the environment

Ease of installation

- Reduce installation time — fully assembled, completely self-contained, tested, and ready to install
- Only requires one connection — to the power system
- Portable asset for short-term projects

Ease of maintenance

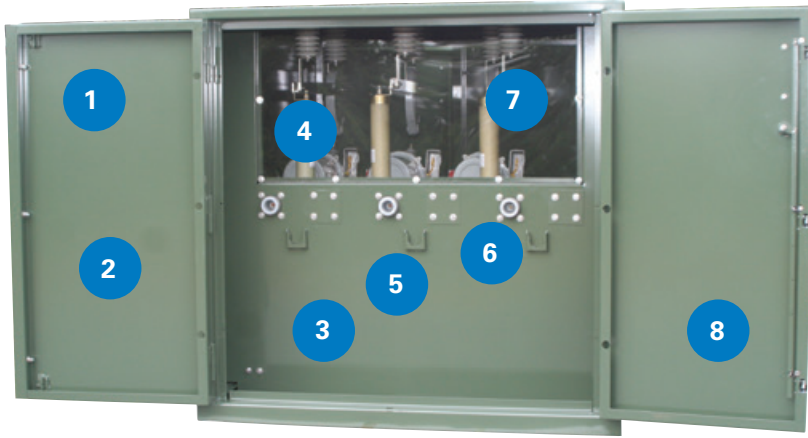
- Easy access to equipment at a workable height — no bucket trucks needed for routine maintenance
- Less environmental contamination and animal interference

Vertically integrated expertise

We offer a single-source solution for reactive power compensation. Beyond just capacitor banks, we provide an integrated approach which includes field measurements, computer simulations, and capacitor bank/harmonic filter design and specification. This combination allows us to provide a complete solution that meets power quality, safety, reliability, aesthetic, and ease of installation and maintenance needs.

- Single point of responsibility and accountability
- Over 70 years of experience in design and manufacture of power capacitors
- We manufacture equipment and components to coordinate in the bank
 - Capacitors
 - Fuses
 - Switches (Edison Capacitor Switch)
 - Controls
 - Relays
 - Arresters
 - Bushings/Inserts

- Field-based application engineers work in sizing and specifying to match requirements — providing the ability to customize to exact needs
- Systems engineering expertise — including the ability to take site measurements and analyze the data with Eaton's CYME™ software — assists with further sizing and planned upgrades as the load changes
- Structural engineering expertise to ensure all designs meet ANSI/IEEE Std. 693™-2005 standard and any local structural requirements
- Available with current-limiting reactors and zero voltage closing (ZVC) control for the mitigation of switching transients



Equipment Front Section



Equipment Rear Section

- 1. Enclosure constructed of sturdy 12-gauge mild steel
- 2. Weather resistant powder-coated paint
- 3. Deadfront barrier for added protection
- 4. Current-limiting fuse
- 5. Parking stand
- 6. Bushing wells
- 7. Clear polycarbonate barrier
- 8. Three-point latching for added safety
- 9. Capacitor
- 10. Vacuum capacitor switch
- 11. Control power transformer
- 12. Current-limiting reactor

For Eaton's Cooper Power series
product information, please contact:
1.877.277.4636 or visit:
www.eaton.com/cooperpowerseries

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